

1. A multifunctional hand tool, comprising:

a handle with an internal cavity;

an insert that is slidably received by the internal cavity of the handle, the insert having a hollow portion, and the insert being threaded on a first end thereof;

5 a master coupling that is slidably received by the hollow portion of the insert; and

a first tool implement that is slidably coupled to the master coupling.
2. The hand tool of claim 1, further comprising a first servant coupling that is slidably received by the master coupling, wherein the first servant coupling slidably

10 receives the first tool implement.
3. The hand tool of claim 2, wherein the master coupling has opposing ends, either end of which can be received by the insert, and the first servant coupling has two opposing ends, either of which can be received by either end of the master coupling.

15
4. The hand tool of claim 3, further comprising a first tool coupling with two opposing ends, the first tool coupling having the first tool implement and a second tool implement, wherein the first and second tool implements are disposed on either end of the first tool coupling.

20
5. The hand tool of claim 4, wherein either end of the first tool coupling can be inserted into either end of the first servant coupling.

6. The hand tool of claim 4, further comprising a second servant coupling, second, third, and fourth tool couplings, and second, third, fourth, fifth, sixth, seventh, and eighth tool implements.

5 7. The hand tool of claim 6, wherein each of the tool couplings has one of the tool implements on either end of the tool coupling, each of the servant couplings slidably receives two of the tool couplings, and the master coupling slidably receives the first and second servant couplings.

10 8. The hand tool of claim 4, further comprising a rotation limiting mechanism that limits relative rotation of the tool coupling with respect to the handle.

9. The hand tool of claim 1, wherein the first tool implement is a pick shaped to be usable to remove debris from clogged sprinkler nozzles.

15 10. The hand tool of claim 1, wherein the first tool implement is a punch shaped to be usable to pierce irrigation tubing.

11. The hand tool of claim 1, wherein the first tool implement is a hex key.

20 12. The hand tool of claim 1, wherein the first tool implement is a flat blade shaped to be usable to remove debris from sprinkler nozzle openings.

13. The hand tool of claim 1, further comprising a clamp that releasably engages a portion of the handle.

14. The hand tool of claim 1, further comprising a nozzle adjustment
5 mechanism disposed on the handle to facilitate rotation of a sprinkler head nozzle with the handle.

15. The hand tool of claim 1, further comprising a rotary head key coupled to the handle, the rotary head key being movable, with respect to the handle, between a
10 retracted position and an extended position.

16. The hand tool of claim 1, wherein the insert further comprises a second end, the insert being threaded on an exterior of both ends and on an interior of the second end.
15

17. The hand tool of claim 16, wherein at least one of the threaded first and second ends of the insert is sized to engage a threaded portion of a sprinkler pop-up stem.

18. The hand tool of claim 1, wherein the handle cavity comprises a
20 hexagonal cross sectional shape.

19. A multifunctional hand tool, comprising:
- a handle with an internal cavity;
- a master coupling with opposing ends, the master coupling being reversibly retained with respect to the handle cavity;
- 5 two servant couplings with opposing ends, the servant couplings being reversibly retained by either end of the master coupling; and
- four tool couplings with opposing ends, the tool couplings being reversibly retained by either end of each servant coupling, each tool coupling having a tool implement at each end of the tool coupling;
- 10 wherein a first tool implement of the tool implements is selected from the group consisting of a punch shaped to be usable to pierce irrigation tubing, a hex key, a flat blade shaped to be usable to remove debris from sprinkler nozzle openings, and a pick shaped to be usable to remove debris from clogged sprinkler nozzles.
- 15 20. The hand tool of claim 19, further comprising an insert being threaded on a first end thereof, the insert being slidably retained by the handle cavity, wherein the master coupling is slidably retained by a hollow portion of the insert.
- 20 21. The hand tool of claim 20, wherein the insert comprises a protrusion located on an exterior of a body portion, and the handle cavity comprises a recessed wall disposed to abut the protrusion of the insert to limit rotation of the insert inside the handle cavity.

22. The hand tool of claim 21, wherein the hollow portion comprises a polygonal cross sectional shape selected to facilitate slidable receipt of an outer surface of the master coupling, the outer surface having a corresponding polygonal cross sectional shape.

5

23. The hand tool of claim 19, wherein the master coupling comprises two inner cavities with polygonal cross sectional shapes selected to facilitate slidable receipt of outer surfaces of the servant couplings, the outer surfaces having corresponding polygonal cross sectional shapes.

10

24. The hand tool of claim 23, wherein each of the servant couplings comprises two inner cavities with polygonal cross sectional shapes selected to facilitate slidable receipt of body portions of the tool couplings, each of the body portions having a corresponding polygonal cross sectional shape between each end.

15

25. The hand tool of claim 24, wherein the handle cavity comprises a polygonal cross sectional shape sized to facilitate adjustment of sprinkler components with corresponding polygonal cross sectional shapes.

20

26. The hand tool of claim 19, further comprising a clamp that releasably engages a portion of the handle.

27. The hand tool of claim 19, further comprising a rotary head key coupled to the handle, the rotary head key being movable, with respect to the handle, between a retracted position and an extended position.

5 28. The hand tool of claim 21, wherein the insert further comprises a second end, the insert being threaded on an exterior of both ends and on an interior of the second end.

29. The hand tool of claim 19, wherein the handle comprises a proximal end
10 and a distal end, wherein at least one protrusion is located on the distal end of the handle to engage a corresponding indentation on a sprinkler head.

30. The hand tool of claim 24, wherein the inner cavities of the master and
servant couplings are sized to drive nut heads.

15

31. The hand tool of claim 19, wherein the first tool implement is a pick shaped to be usable to remove debris from clogged sprinkler nozzles.

32. The hand tool of claim 19, wherein the first tool implement is a punch
20 shaped to be usable to pierce irrigation tubing.

33. The hand tool of claim 19, wherein the first tool implement is a hex key.

34. The hand tool of claim 19, wherein the first tool implement is a flat blade shaped to be usable to remove debris from sprinkler nozzle openings.

MADSON & METCALF, P.C.
ATTORNEYS AT LAW
900 GATEWAY TOWER WEST
15 WEST SOUTH TEMPLE
SALT LAKE CITY, UTAH 84101

35. A multifunctional hand tool, comprising:
a handle with an internal cavity;
a master coupling that is slidably coupled to the handle cavity;
a first servant coupling that is slidably received by the master coupling;
5 a first tool coupling that is slidably received by the first servant coupling, the first
tool coupling having two opposing ends, and a first tool implement on one end; and
a sprinkler head extraction tool coupled to the handle.

36. The hand tool of claim 35, further comprising a second servant coupling,
10 wherein the first and second servant couplings are slidably received by the master
coupling.

37. The hand tool of claim 36, further comprising second, third, and fourth
tool couplings and second, third, fourth, fifth, sixth, seventh, and eighth tool implements,
15 each of the tool couplings having one of the tool implements on either end of the tool
coupling.

38. The hand tool of claim 35, wherein the first tool implement is selected
from the group consisting of a punch shaped to be usable to pierce irrigation tubing, a hex
20 key, a flat blade shaped to be usable to remove debris from sprinkler nozzle openings,
and a pick shaped to be usable to remove debris from clogged sprinkler nozzles..

39. The hand tool of claim 35, wherein the sprinkler head extraction tool is an
insert being threaded on a first end thereof, the insert engagable with corresponding

threads of a sprinkler pop-up stem to facilitate extraction of the pop-up stem from a retracted configuration.

40. The hand tool of claim 35, wherein the sprinkler head extraction tool is a rotary head key insertable into a keyhole of a rotary head sprinkler to facilitate extraction of the rotary head from a retracted configuration, the rotary head key being movable between a retracted position and an extended position.

41. The hand tool of claim 35, further comprising a clamp that can engage a sprinkler pop-up stem in an extended configuration to keep the sprinkler pop-up stem from returning to a retracted configuration.

42. The hand tool of claim 35, wherein the handle has a proximal end and a distal end, and a protrusion located on the distal end that can engage a corresponding indentation on a sprinkler head to facilitate rotation of the sprinkler head via rotation of the handle.

43. A multifunctional hand tool, comprising:
- a handle with a proximal and distal end and an internal cavity and two protrusions disposed on the distal end of the handle;
 - a clamp that releasably engages a portion of the handle;
 - 5 an insert removably retained by the handle cavity, the insert having a hollow portion, and the insert being threaded on a first end thereof;
 - a master coupling with opposing ends, the master coupling being reversibly retained by the insert;
 - two servant couplings with opposing ends, the servant couplings being reversibly
 - 10 retained by either end of the master coupling;
 - four tool couplings with opposing ends, the tool couplings being reversibly retained in both ends of each servant coupling, each tool coupling having a tool implement at each end of the tool coupling; and
 - a rotary head key coupled to the handle, the rotary head key being movable
 - 15 between a retracted position and an extended position.

44. A method of performing maintenance on a sprinkler head with a single multifunctional hand tool comprising a handle with an internal cavity, a sprinkler head extraction tool that can engage a sprinkler head, a sprinkler nozzle unclogging member, and a screwdriver, the method comprising:

5 engaging a component of the sprinkler head with the sprinkler head extraction tool;

elevating the component of the sprinkler head from a retracted configuration with the sprinkler head extraction tool; and

10 performing maintenance on the sprinkler head with the hand tool.

45. The method of claim 44, wherein the sprinkler head extraction tool is an insert being threaded on a first end thereof, the insert being slidably received by the internal cavity of the handle, wherein engaging the component of the sprinkler comprises engaging a threaded portion of a pop-up stem with the first end of the insert.

15 46. The method of claim 45, wherein the multifunctional hand tool further comprises a clamp releasably engaged with the handle, further comprising the step of maintaining the pop-up stem in an elevated configuration with the clamp.

20 47. The method of claim 44, wherein the sprinkler head extraction tool is a rotary head key, wherein the method further comprises moving the rotary head key from a retracted position to an extended position with respect to the handle, wherein engaging the component of the sprinkler comprises engaging a corresponding keyhole on a sprinkler rotary head with the rotary head key.

48. The method of claim 44, wherein performing maintenance on the sprinkler head comprises unclogging a nozzle of the sprinkler head with the sprinkler nozzle unclogging member, wherein the sprinkler nozzle unclogging member is selected from
5 the group consisting of a pick, a flat blade, and a punch.